I claim:

1. In a computing system in which groups of individual instructions are executable in parallel by processing pipelines, apparatus for routing each instruction in a group to be executed in parallel to an appropriate pipeline, the apparatus comprising:

storage for holding at least one group of instructions to be executed in parallel, each instruction in the group having associated therewith a pipeline identifier indicative of the pipeline for executing that instruction;

a crossbar having a first set of connectors coupled to the storage for receiving instructions therefrom and a second set of connectors coupled to the processing pipelines;

means responsive to the pipeline identifier of the individual instructions in the group for routing individual instructions onto appropriate ones of the second set of connectors, to thereby supply each instruction in the group to be executed in parallel to the appropriate pipeline.

2. Apparatus as in claim 1 wherein:

the first set of connectors consists of a set of first communication buses, one for each instruction in the storage;

the second set of connectors consists of a set of second communication buses, one for each pipeline; and

the means responsive to the pipeline identifier comprises:

a set of decoders coupled to the storage to receive as first input signals the pipeline identifiers and in response thereto supply as output signals a switch control signal; and

a set of switches, coupled to the decoders, one switch at the intersection of each of the first set of connectors with the second set of connectors, the switches providing connections in response to receiving

the switch control signal to thereby supply each instruction in the group to be executed in parallel to the appropriate pipeline.

3. In a computing system in which sets of individual instructions are executable in parallel by processing pipelines, apparatus for routing each instruction in a group to be executed in parallel to an appropriate pipeline, the apparatus comprising:

a storage for holding a collection of instructions, including at least one set of instructions to be executed in parallel, each instruction in the set having associated therewith a pipeline identifier indicative of the pipeline to which that instruction is to be issued;

a crossbar switch having a first set of connectors coupled to the storage for receiving instructions therefrom and a second set of connectors coupled to the processing pipelines;

selection means connected to receive the set of instructions and connected to receive information about those instructions to be next executed in parallel for supplying in response thereto an output signal indicative of the next set of instructions to be executed in parallel; and

decoder means coupled to receive the output signal and each of the pipeline identifiers of the instructions in the storage for selectively connecting ones of the first set of connectors to ones of the second set of connectors to thereby supply each instruction in the set to be executed in parallel to the appropriate pipeline.

4. Apparatus as in claim 3 wherein the first set of connectors consists of a set of first communication buses, one for each instruction in the storage;

the second set of connectors consists of a set of second communication buses, one for each pipeline;

the decoder means comprises a set of decoders coupled to receive as first input signals the pipeline

identifiers and the information about the next group of instructions to be executed by the pipelines and in response thereto supply as output signals a switch control signal; and

the crossbar switch includes a set of switches, one at the intersection of each of the first set of connectors with the second set of connectors, the switches providing connections in response to receiving the switch control signal to thereby supply each instruction in the group to be executed in parallel to the appropriate pipeline.

5. Apparatus as in claim 4 wherein the multiplexer supplies an output signal to the decoders to select the next group of instructions to be supplied to the pipelines.

6. In a computing system in which groups of individual instructions are executable in parallel by processing pipelines, a method for transferring each instruction in a group to be executed through a crossbar switch having a first set of connectors coupled to the storage for receiving instructions therefrom and a second set of connectors coupled to the processing pipelines, the method comprising:

storing in storage at least one group of instructions to be executed in parallel, each instruction in the group having associated therewith a pipeline identifier indicative of the pipeline which will execute that instruction; and

using the pipeline identifiers of the individual instructions in the at least one group of instructions which are to be executed next to control switches between the first set of connectors and the second set of connectors to thereby supply each instruction in the group to be executed in parallel to the appropriate pipeline.

7. A method as in claim 6 wherein the step of using comprises:

supplying the pipeline identifiers of the individual instructions in the at least one group of instructions to a corresponding number of decoders, each of which provides an output signal indicative of the pipeline identifiers; and

using the decoder output signals to control the switches between the first set of connectors and the second set of connectors to thereby supply each instruction in the group to be executed in parallel to the appropriate pipeline.

8. In a computing system in which groups of individual instructions are executable in parallel by processing pipelines, a method for supplying each instruction in a group to be executed in parallel to an appropriate pipeline, the method comprising:

storing in storage at least one group of instructions to be executed in parallel, each instruction in the group having associated therewith a pipeline identifier indicative of the pipeline which will execute that instruction; and

using the pipeline identifier of those instructions to be next executed in parallel to control switches in a crossbar switch having a first set of connectors coupled to the storage for receiving instructions therefrom and a second set of connectors coupled to the processing pipelines to thereby supply each instruction in the group to be executed in parallel to the appropriate pipeline.